# Comprehensive Teacher Induction: Linking Teacher Induction to Theory

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ABSTRACT Teacher retention is a wide concern in education and in response school districts throughout the United States are developing more comprehensive teacher induction programs. Components of teacher induction programs that have assisted with successful teacher development include release time for teacher observation, assignment of a knowledgeable mentor, and supportive administration. Teacher confidence is a characteristic that is essential in the development of new educators, yet sometimes ignored during induction programs. This paper recognizes the features of a comprehensive teacher induction program, and how tenets of self-efficacy and the self-determination theory can be linked to practice to encourage the development of a beginning teacher and promote longevity in a teacher's career.

#### **Teacher Induction Programs**

Teacher retention is a wide concern in education for both the traditionally- and alternatively-certified teacher. Statistics show up to 50% of teachers in urban schools leave within the first three years of teaching (Berry & Byrd, 2012; Ingersoll & Strong, 2012, Smith & Ingersoll, 2004). Teaching is unlike other professions in that traditionally there is a lack of support and guidance to new employees. Teachers assume full responsibility from the first day on the job. Teaching is also a somewhat isolating career with a "trial by fire" experience and it has a higher turnover rate than other professions, such as practicing law, nursing, and engineering (Ingersoll, 2012, p. 47). Many new teachers find a disconnect when it comes to transferring what they have learned in teacher preparation courses to the classroom. This disconnect correlates with what researchers Eggen and Kauchak (as cited in Harris, Lowery-Moore, & Farrow, 2008) refer to as transfer of learning theory in which "learners must be provided with multiple opportunities to practice" (p. 319). Due to the inability to transfer knowledge and the lack of support during their initial years in the field, educators are leaving the profession early (Killeavy, 2006; Smith & Ingersoll, 2004). New teachers require more classroom management training, support, and mentorship from administration and veteran teachers (Ingersoll & Strong, 2012).

As a response to the problem of teachers leaving the field prematurely, many school districts across the United States, although not mandated to do so by the government, have created teacher induction programs to help sustain teachers in the field. Although the implementation of induction programs is a step in the right direction, they "lack a shared, specific definition of what an induction program should entail" (Killeavy, 2006, p. 169). The induction period for teachers should last from one to three years with the main goal of providing support, which can influence a teacher's behavior for his or her entire career (Fry, 2007). The

need for a complete and rigourous teacher induction program is now more essential due to the changes in education and the various demands on teachers; more is needed than a simple introduction. Effective induction programs not only support a new teacher, but also assist the new teacher in adjusting to the education field (Fry, 2010).

In a review of literature, teacher induction programs vary in duration and intensity and vary in who can be involved. For some schools, the induction is only for brand new teachers, yet in others, it is for any teacher new to that particular school. The induction programs do not necessarily provide additional education, but rather serve to create a support network and a type of orientation during the teacher's first year. In addition to raising retention levels, participation in an induction program can also lead to an increase in a teacher's self-efficacy and confidence in his or her skills (Turley, Powers, & Nakai, 2006). Quality induction programs include a veteran teacher serving as a mentor teacher from the same subject, common planning, regularly scheduled collaboration and supportive teachers and administration (Ingersoll, 2012; Killeavy, 2006; Cherubini, 2009). The ultimate goal of an effective teacher induction program is to enhance the new teachers' skills and satisfaction. These enhanced skills and higher levels of self-efficacy then lend themselves to higher rates of teacher retention, and, ultimately, increased student learning and achievement (Ingersoll, 2012).

In recent years, the number of new teachers receiving some type of induction support or mentoring rose from 41% in 1990 to nearly 80% in 2008 (National Comprehensive Center for Teacher Quality, 2010). The goals for teacher induction programs include teacher socialization, and assistance in adjustment and development. Statistics show that the more involved new teachers are within the school and the more support they receive, the more likely they are to remain in the school, and in education (Smith & Ingersoll, 2004). The concept of socialization is

one that has not been promoted in education, but research indicates a correlation to teacher retention (Fry, 2010; Killeavy, 2006). Teachers who feel like a part of a school are more likely to remain in their placement. Teacher induction programs need to include all teachers and administration to be the most successful. In addition to feeling supported, new teachers need to learn to engage in critical dialogue and self-reflection in order to evaluate their teaching practice (Broemmel, Swaggerty, & McIntosh, 2009; Killeavy, 2006). Teachers who have participated in an induction program rate their overall efficacy in the classroom higher than their counterparts who have not participated in an induction program (Unruh & Holt, 2010).

### **Components of Induction Programs**

Although 80% of new teachers have been assigned a mentor teacher in the first year of teaching, most are not effective due to lack of training and knowledge of how to be mentor to a new teacher (Smith & Ingersoll, 2004). Mentoring during the induction program provides technical support such as advice and recommendations and emotional support such as moral support (Wang & Odell, 2002). The mentor teacher is one who has an innate, or intrinsic desire to help another teacher and should be carefully selected (Gardiner, 2012). The mentor teacher should be one who has experience teaching the same subject and in the same grade level, and have a common planning period (Broemmel et al., 2009; Fry, 2007). Additionally, it is beneficial if the mentor teacher has had prior training on how to coach and communicate with new teachers (Fry, 2010). The mentor teacher should be a veteran educator with "strong interpersonal skills, respect for multiple perspectives and outstanding classroom practice" (Moir & Gless, 2001, p. 112).

One requirement of a mentor teacher is to help new teachers learn to reflect on their own practice and learn to adjust their skills accordingly (Gardiner, 2012). "By collaborating with other new teachers and mentors in a community of genuine dialogue and mutual respect, new

teachers garnered new interpretations of their professional practice" (Cherubini, 2009, p. 194). One of the most vital components in a mentoring relationship is trust. Trust is something that must be earned over a period of time and must be seen as a priority among the parties in order for an effective foundation to be built. Mentors must take on the role of "supporter, not evaluator" and offer "options, not mandates" (Gardiner, 2012, pp. 204-205). It is beneficial for mentor teachers to be in close proximity to their mentees to provide efficient support when needed (Fry, 2007).

### **Theories that Inform Teacher Induction Planning**

One of the main goals of a teacher preparation program is to prepare teachers to be successful in the classroom. In addition to learning a variety of pedagogical skills and content knowledge, beginning teachers need to have confidence in their abilities to instruct students and manage a classroom (Duffin et al., 2012). There is a national trend of new teachers not only lacking adequate skills, but also lacking confidence (Garvis, 2009). A teacher induction program should be the bridge between a teacher preparation program and the beginning of one's teaching career. Participation in a comprehensive teacher induction program can contribute to an increase in skill knowledge, can increase the level of confidence in one's ability to teach, and essentially increase one's motivation to succeed. Increased skill level, higher levels of confidence, and intrinsic motivation are linked to an increase in teacher retention and sense of self-efficacy (Fry, 2009).

#### **Bandura: Self-Efficacy**

Through a review of the literature, Bandura's (1989) concept of self-efficacy, which is rooted in Bandura's social cognitive theory, has been meaningfully connected with studies of teacher induction programs (Duffin, French, & Patrick, 2012; Garvis, 2009; Ross & Bruce, 2007; Tschannen-Moran, Woolfolk Hoy, & Hoy 1998; Tschannen-Moran, & Woolfolk Hoy, 2001).

Human motivation is a cognitive behavior, which strongly influences the ability of a teacher to be successful in the classroom. Bandura (1977) described the concept of self-efficacy as the belief that one can "successfully execute the behavior required to produce outcomes" (p. 193), even in the face of adversity. Efficacious beliefs influence human thought and actions. Self-efficacy differs from other opinions of one's self, in that self-efficacy focuses on the ability to perform a specific task (Tschannen-Moran et al., 1998). Additionally, Bandura (1997) claimed that a teacher's levels of efficacy might not be the same for each specific task.

Self-efficacy is an important component in the development of a beginning teacher. Research indicates that efficacy levels in beginning teachers decrease after preparation courses, which may be linked to the removal of support after teacher training (Garvis, 2009). One's perception of self-efficacy is associated with the way one perceives success and failure, as well as influences motivation and ability to set goals (Swanson, 2012). A teacher induction program can encourage self-efficacy within new teachers. A teacher who feels confident in his or her ability to teach has a lower level of stress, which can influence whether that teacher remains in the field of education (Tschannen-Moran et al., 1998). High levels of self-efficacy are an indicator of how much effort teachers invest into their teaching and how resilient they are when things do not go smoothly (Tschannen-Moran & Hoy, 2001).

In connection with the social cognition theory, Bandura suggested four sources of self-efficacious development: mastery experiences, physiological and emotional states, vicarious experiences, and social persuasion (Bandura, 1977; Bandura, 1989; Duffin et al, 2012; Jamil, Ross & Bruce, 2007; Swanson, 2012; Tschannen-Moran et al., 1998). Mastery experiences are the most influential source of efficacy development, as efficacious beliefs can be strengthened upon successful completion of a task (Jamil et al., 2012; Tschannen-Moran, 1998). Through

repeated success of a task, strong efficacious beliefs are developed (Bandura, 1977). The direct opposite can be true if the teacher does not successfully perform a task. In a teacher induction program, the mentor teacher can help the new teacher by observing him or her as he or she instructs a class. Feedback from mentor teachers and superiors can validate experiences of beginning teachers and can enhance mastery experiences (Ross & Bruce, 2007). Physiological and emotional state of being correlates to the development of efficacious beliefs. For example, it is normal to feel excited or nervous as a new educator, but those feelings of arousal can be seen either as positive or negative depending on how the teacher views him or herself in the situation. Vicarious experiences, including observation of veteran teachers, can influence one's level of self-efficacy as a teacher by demonstrating how to be successful and how to manage the task of instructing a class. A new teacher will often compare his- or her-self to others, which can encourage a new teacher to believe he or she has the abilities to be like the veteran teacher. When new teachers observe mentor teachers successfully perform a task they do not feel confident about, it can encourage the new teachers to believe they can perform the same task (Bandura, 1977). Social and verbal persuasion, which includes encouragement and constructive feedback, can provide valuable information on teaching (Bandura, 1977). A mentor teacher can provide this encouragement and constructive feedback by assisting with "strategies and methods that can contribute to a teacher's arsenal of skills" (Tschannen-Moran, 1998, p. 230).

Much of human behavior is learned and developed through modeling behavior of others (Bandura, 1977). A component of a successful teacher induction program is the release time for new teachers to observe veteran teachers. It is through this observation and modeling of behaviors that new teachers can learn to be effective teachers. Observing another teacher not only provides valuable pedagogical information, it also contributes to "self-perceptions of

teaching competence, as the viewer compares self with model" (Tschannen-Moran et al., 1998, p. 229). Collaboration with others is another component of a comprehensive teacher induction program that can have positive contributions to a beginning teacher's efficacy. Tschannen-Moran et al., (1998) concur that when teachers collaborate to address various topics, a teacher's feeling of efficacy is likely to increase. A mentor teacher who has "strong interpersonal skills, respect for multiple perspectives, and outstanding classroom practice" can help encourage an increase in efficacious thoughts and supports teacher retention (Moir & Gless, 2001, p. 112).

Furthermore, self-reflection can positively influence new teachers in their development. Beginning teachers often have the tendency to visualize failure scenarios. These inefficacious thoughts can hinder the new teacher's ability to be effective in the classroom. Not only do doubts of one's capabilities hamper one's desire to take on a difficult task, but they also affect one's ability to recover from a failure (Bandura, 1989). This is an opportunity for a mentor teacher to verbally encourage the new teacher to visualize positive scenarios.

Common critiques for Bandura's theory of self-efficacy include the idea that the definition of self-efficacy is too ambiguous and therefore can lead to methodological deficiencies in research (Eastman & Marzillier, 1984). Although self-efficacy focuses on a person's cognitive ability to measure his or her ability to complete a task successfully, some researchers say that more precise definition of self-efficacy is needed. Although Bandura's theory of self-efficacy states that beliefs are developed and strengthened by experiences and impacted by social cues (Bandura, Caprara, Barnaranelli, Gerbino, & Pastorelli, 2003), another common critique indicates that because human nature is concerned with outcomes of performing a task, it is impossible to differentiate between "outcome-expectation and efficacy-expectation" (Eastman & Marzillier, 1984, p. 214).

## **Deci & Ryan: Self-Determination Theory**

Malcolm Knowles popularized the concept of andragogy, which holds six tenets of adult learners. The sixth principle of andragogy focuses on motivation (Houde, 2006). Andragogy posits adults are more motivated to learn when they know why they need to learn something and can make decisions about their own learning; when they can connect learning to previous experience; and when it has immediate relevancy to their lives (Houde, 2006; Merriam & Bierema, 2014). Furthermore, adults are more intrinsically motivated than motivated by external factors (Ryan & Deci, 2000a). Self-determination theory posits that humans have a basic drive toward growth and will seek motivation to do so (Houde, 2006; Lyness, Lurie, Ward, Mooney, & Lambert, 2013). Adults find motivation when they are able to have a voice in what they are learning, understand why they are learning something, and understand what it is being learned. Intrinsic motivation includes the need and desire to gain knowledge.

Psychologists Deci & Ryan developed the self-determination theory (SDT) in response to the andragogical tenets related to motivation, in which SDT is needs-based, with a desire for personal growth driven by three basic human needs: autonomy, competence, and relatedness (Houde, 2006; Lyness et al., 2013). Adult learners want to have a sense of autonomy or believe that they have a choice. Adult learners appreciate the opportunity to have a choice or to be given a meaningful rationale if a choice cannot be given in a matter (Deci & Ryan, 2000a). This choice allows for individualistic learning, instead of feeling controlled in the learning environment (Deci, Vallerand, Pelletier, & Ryan, 1991). Next, adult learners desire competence or mastery in learning. It is a natural adult emotion to desire to be good at something and as an adult learner, the level of challenge must support the skills held by the learner (Lyness et al., 2013). Those who work with adults can encourage competence by providing meaningful feedback and knowing the

needs of the learner. Finally, the third basic need in the self-determination theory is relatedness, of a sense of purpose. Adult learners in general, enjoy feeling connected to other people, believing they have a purpose, and having others acknowledge their feelings (Lyness et al., 2013). In SDT, it is important that individual connections be fostered. These types of nurtured relationships are found within advisor/advisee or mentor/mentee interactions.

Self-determination theory suggests that when all three basic human needs - autonomy, competence, and relatedness are met, the adult is more likely to be happy and productive (Deci et al., 1991). SDT is relevant and linked to beginning teacher development and teacher induction programs in that a comprehensive induction program seeks to assist the development of a teacher by meeting the three basic human needs, and assisting the teacher on a personal level with a mentor relationship.

The cognitive evaluation theory (CET), a sub-theory of SDT with a focus on intrinsic motivational factors, argues that feedback and communication with others can increase intrinsic motivation for a particular action (Ryan & Deci, 2000a; Ryan & Deci, 2000b). Intrinsically motivated activities include activities that one would complete in the absence of external rewards. On the opposite side of the spectrum of intrinsic motivation is *amotivation*, in which a person does not find interest in completing actions (Ryan & Deci, 2000a). Reasons for amotivation can stem from not valuing the action to not feeling competent to perform the task, which is associated with levels of self-efficacy (Ryan & Deci, 2000b).

The self-determination theory connects to beginning teachers' motivation to learn. Social support is a central element to developing self-determination and increasing intrinsic motivation.

A well-designed, comprehensive teacher induction program will encourage intrinsic motivation and can satisfy one's innate psychological need for autonomy and competence, SDT is connected

to the social cognitive learning theory of Albert Bandura in which self-efficacy is developed through the feelings of competency in a task (Deci & Ryan, 2000). Intrinsic motivation is an important characteristic for educators, as a teacher must have the internal motivation to learn and perform to the best of his or her ability. A mentor teacher can assist with the encouragement of intrinsic motivation by providing unexpected positive encouragement and feedback. Positive feedback provided to a beginning teacher can help the teacher feel more competent, which is key to personal growth and can help increase motivation levels. Intrinsic motivation is unique for each individual and, more often than not, is task-specific. SDT states that one wants to be competent and is motivated by the internal desire to be the best one can be and is also encouraged by relationships with others in similar situations (Martin & Dowson, 2009). A comprehensive teacher induction program can encourage this motivation by providing both mentors who assist with constructive feedback and time for the beginning teacher. SDT and self-efficacy are closely connected in that both are cognitive theories in which the person desires to feel competent in performing a task.

As with all theories, the self-determination theory is not without criticisms. The most common critique of the SDT is that the theory assumes that all people have a "growth-orientated nature" (Lyness, 2013, p. 151), or have the desire to do more and learn more. Additionally, the self-determination theory does not take into consideration other basic human needs, nor does it consider how autonomy, competence, and relatedness can change throughout development, or vary within different situations (Deci et al., 1991). Finally, the majority of research involving the self-determination theory is empirical research, or research conducted through direct or indirect observations. Some researchers state that empirical studies are not scientific because just because something happened before, does not necessarily mean it will happen again. Instead, these

studies suggest the following: "independence is not a universal need; having many options is not a basic need, nor is it even always edifying; non-conscious determination can undermine autonomous functioning, but it need not; and autonomous functions still requires brain" (Ryan & Deci, 2006, p. 1580).

#### Conclusion

While teacher induction programs impact teaching practices, student achievement, and lower teacher turnover rates, only 27 states now require new teachers to participate in some type of induction support (National Association of State Boards of Education, 2012). Researchers state that it can take up to five years for a teacher to become fully proficient in his or her skills; therefore, teacher retention needs to be a priority in teacher development. Providing the additional support and resources through a comprehensive teacher induction program during the first two years of a teacher's career can influence teachers to stay in the field of education. The results of participation in a comprehensive teacher induction program have a trickle-down effect. Teachers who participate in an effective induction program feel more supported, have a sense of belonging, and have higher levels of efficacy (Fry, 2009). Teachers who feel supported remain in the education field longer. Teachers who stay longer in the field gain more experience and are more likely to be effective teachers, which then correlates with higher student achievement.

A comprehensive teacher induction program can use Bandura's concept of self-efficacy and Deci and Ryan's self-determination theory to develop an effective program. The use of selection criteria for mentor teachers will likely lead to more effective mentors who are able to assist new teachers in increasing efficacy by surrounding the beginning teachers with positive role models. Criteria for mentor teachers should include requiring mentor teachers to have at least three years of successful teaching experience, be knowledgeable in subject area and

pedagogy, and have a commitment to the professional development of a new teacher.

Additionally, it would be beneficial for the school district to implement mentor teacher training courses, which include strategies for building relationships, and effective observation techniques and assessment uses. Next, mentor and mentee should have the opportunity to collaborate with a common planning period daily. This common time provides the opportunity for the mentor teacher to provide feedback on lessons, as well as support the new teacher in other miscellaneous endeavors throughout the school year. This time together for observation and collaboration directly correlates with the self-determination theory by "developing security and establishing connectivity with other people" (Karaarslan, Sungur, & Ertepinar, 2014, p. 4). New teachers will also benefit from the opportunity to observe other experienced teachers, as this socialization relates to social persuasion, meaning by observing others succeed, the beginning teacher's beliefs that he or she can succeed may also increase (Swanson, 2012).

Studies have indicated that higher levels of efficacy encourage teachers to be persistent in their efforts to be successful, especially for beginning teachers (Tschannen-Moran et al., 1998). The opposite can be true, in that low levels of efficacy can discourage a beginning teacher from being motivated and extending effort to become successful (Swanson, 2012). A teacher's level of self-efficacy is important, even as he or she is developing. Increasing self-efficacy is one reason why feedback on performance is an important ingredient in one's commitment to teaching. In an effective teacher induction program, the mentor teachers and a strong leadership team can provide the beginning teacher with this feedback.

New teachers need additional support and continued training to help encourage efficacious beliefs. Although intrinsic motivation is likely to increase directly following training courses, that motivation quickly depletes without consistent support and encouragement

(Karaarslan et al., 2014). This is where an effective teacher induction program becomes vital to the longevity of a teacher's career. Research suggests teachers with high levels of self-efficacy are more likely to remain in the field of education (Jamil et al., 2012). Mentor teachers can help foster positive instructional experiences that will encourage an increase in efficacious beliefs in new teachers (Fry, 2009).

Beginning teachers benefit from being intrinsically motivated to learn. These intrinsically motivated behaviors "which satisfy the innate psychological needs for competence and autonomy" are examples of self-determined behaviors (Ryan & Deci, 2000a, p. 65). Verbal persuasion, or the use of verbal feedback, can encourage teachers to believe they possess the capabilities to be successful (Bandura, 1982). This verbal persuasion is also linked to the progression and development of motivation in novice teachers.

Both self-efficacy based from the social cognitive learning theory of Albert Bandura, and the self-determination theory from Edward Deci and Richard Ryan, are linked to the development of beginning teachers. An effective teacher induction program should recognize that too much of a "challenge relative to a person's skills leads to anxiety and disengagement, whereas too little leads to boredom and alienation" (Deci & Ryan, 2000, p. 260). Teacher induction programs need to focus on what beginning teachers need to learn and develop the skills necessary for them to be competent in the classroom. As one of the tenets of andragogy, adults learn more effectively when they understand why they are learning, and can immediately use the information (Houde, 2006). In connection with a new teacher induction program, a mentor teacher can assist a beginning teacher with this understanding of learning and transfer of knowledge into the classroom. As mentioned earlier, the research indicates that both levels of efficacy and intrinsic motivation decrease rapidly without the support of other professionals

(Karaarslan et al., 2014). Developing mastery of skills and learning to cope with challenges in new experiences, especially as a beginning teacher, are indispensable in evolving a sense of self.

A comprehensive teacher induction program will serve as a pathway for novice teachers to seek the assistance and additional support they desire and need.

#### References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122-147.
- Bandura, A. (1989). Regulation of cognitive processes through perceived self-efficacy. *Developmental Psychology*, 25(5), 729-735.
- Bandura, A., Caprara, G. V., Barbaranelli, C., Gerbino, M., & Pastorelli, C. (2003). Role of affective self-regulatory efficacy in diverse spheres of psychosocial functioning. *Child Development*, 74(3), 769-782.
- Berry, B., & Byrd, A. (2012). New teacher induction—in and out of cyberspace. *NSSE Yearbook*, 111(2), 365-386.
- Broemmel, A.D., Swaggerty, E.A., & McIntosh, D. (2009). Navigating the waters of teacher induction: One beginning teacher's journey. *New Educator*, *5*(1), 67-80.
- Cherubini, L. (2009). New teachers' perceptions of induction: Insights into principled practices. *Alberta Journal of Educational Research*, 55(2), 185-188.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self determination of behavior. *Psychological Inquiry*, 11(4), 227-268.
- Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational psychologist*, 26(3-4), 325-346.
- Duffin, L. C., French B. F., & Patrick, H. (2012). The teachers' sense of efficacy scale: Confirming the factor structure with beginning pre-service teachers. *Teaching and Teacher Education: An International Journal of Research and Studies*, 28(6), 827-834.
- Eastman, C. & Marzillier, J. S. (1984). Theoretical and methodological difficulties in Bandura's self-efficacy theory. *Cognitive Therapy and Research*, 8(3), 213-229.
- Fry, S. W. (2007). First-year teachers and induction support: Ups, downs, and in-betweens. *Qualitative Report*, 12(2), 216-237.
- Fry, S. W. (2009). Characteristics and experiences that contribute to novice elementary teachers' success and efficacy. *Teacher Education Quarterly*, 36(2), 95-110.
- Fry, S. W. (2010). The analysis of an unsuccessful novice teacher's induction experiences: A case study presented through layered account. *Qualitative Report*, 15(5), 1164-1190.
- Gardiner, W. (2012). Coaches' and new urban teachers' perceptions of induction coaching: Time, trust, and accelerated learning curves. *The Teacher Educator*, 47(1), 195-215.
- Garvis, S. (2009). Establishing the theoretical construct of pre-service teacher self-efficacy for arts education. *Australian Journal of Music Education*, *1*, 29-37.

- Harris, S., Lowery-Moore, H., & Farrow, V. (2008). Extending transfer of learning theory to transformative learning theory: A model for promoting teacher leadership. *Theory Into Practice*, 47(1), 318-326.
- Houde, J. (2006). Andragogy and motivation: An examination of the principles of andragogy through two motivation theories. Retrieved from http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED492652
- Ingersoll, R. M. (2012). Beginning teacher induction. What the data tell us. *Phi Delta Kappan*, 93(8), 47-51.
- Ingersoll, R. M., & Strong, M. (2012). What the research tells us about the impact of induction and mentoring programs for beginning teachers. *National Society for the Study of Education*, 111(2), 466-490.
- Jamil, F. M., Downer, J. T., & Pianta, R. C. (2012). Association of pre-service teachers' performance, personality, and beliefs with teacher self-efficacy at program completion. *Teacher Education Quarterly*, *39*, 119-138.
- Karaarslan, G., Sungur, S., & Ertepinar, H. (2014). Developing preservice science teachers' self-determined motivation toward environment through environmental activities. *International Journal of Environmental & Science Education*, 9, 1-19.
- Killeavy, M. (2006). Induction: A collective endeavor of learning, teaching, and leading. *Theory Into Practice*, 45(2), 168-176.
- Lyness, J. M., Lurie, S. J., Ward, D. S., Mooney, C. J., & Lambert, D. R. (2013). Engaging students and faculty: implications of self-determination theory for teachers and leaders in academic medicine. *BMC medical education*, *13*(1), 151.
- Martin, A. J., & Dowson, M. Interpersonal relationships, motivation, engagement, and achievement: Yields for theory, current issues, and educational practice. *Review of Educational Research*, 79(1), 327-365.
- Merriam, S. B., & Bierema, L. L. (2014). *Adult learning: Linking theory and practice*. San Francisco, CA: Jossey-Bass.
- Moir, E. & Gless, J. (2001). Quality induction: An investment in Teachers. *Teacher Education Quarterly*, 28(1), 109-114.
- National Association of State Boards of Education. (2012). *NASBE discussion guide: Teacher induction*. Arlington, VA: Author.
- National Comprehensive Center for Teacher Quality. (2010). *Teacher preparation data tool.* Washington, DC: Author. Retrieved from http://www3.learningpt.org/tqsource/datatool/PrepQuest.aspx
- Ross, J., & Bruce, C. (2007). Professional development effects on teacher efficacy: Results of randomized field trial. *The Journal of Educational Research*, 101(1), 50-60.
- Ryan, M. R., & Deci, E. L. (2000a). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology* 25, 54-67.

- Ryan, M. R., & Deci, E. L. (2000b). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.
- Ryan, R. M., & Deci, E. L. (2006). Self-regulation and the problem of human autonomy: Does psychology need choice, self-determination, and will? *Journal of Personality*, 74, 1557-1586.
- Smith, T. M., & Ingersoll, R. M. (2004). What are the effects of induction and mentoring on beginning teacher turnover? *American Educational Research Journal*, 41(3), 681-714.
- Swanson, P. (2012). Second/foreign language teacher efficacy and its relationship to professional attrition. *The Canadian Modern Language Review*, 68(1), 78-101.
- Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, *17*, 783-805.
- Tschannen-Moran, M., Hoy, A. W., & Hoy, W. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research*, 68(2), 202-248.
- Turley, S., Powers, K., & Nakai, K. (2006). Beginning teachers' confidence befroe and after induction. *Action in Teacher Education*, 28(1), 27-39.
- Unruh, L., & Holt, J. (2010). First-year teaching experiences: Are they different for traditionally versus alternatively certified teachers? *Action in Teacher Education*, 32(3), 3-14.
- Wang, J., & Odell, S. J. (2002). Mentored learning to teach according to standards-based reform: A critical review. *Review of Educational Research*, 72, 481-546.